



SPI, CMM, SMS Review

- 1. What is Software Process Improvement (SPI)?**
- 2. What is the Capability Maturity Model (CMM)?**
- 3. What organization has authority to issue changes to the CMM?**
- 4. How many maturity levels are there in the CMM?**
- 5. What are the Level 2 KPAs?**
- 6. In which KPA is Testing covered?**
- 7. What is the System Modification Scenario (SMS)?**
- 8. Who has authority to issue changes to the SMS?**
- 9. What are the levels of the SMS?**



Requirements Management Introduction

- 1. What is Requirements Management (RM)? What is its purpose?**
- 2. What are some of the RM objectives?**
- 3. Who is responsible for RM?**
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- 5. What is the purpose of the Software Change Specification?**
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Model System



The Asbury Company is a small Welding enterprise. It maintains a payroll file on a mainframe computer. The purpose of the file is to maintain current personnel and payroll information on all 500 of their employees.

The current payroll MASTER file is called PAYDATA. It is a INDEX SEQUENTIAL FLAT file. There are multiple FIXED LENGTH record of 80 CHARACTERS. The records exist in numeric order. The Social Security Number is the INDEX KEY.

The PERSREC is the 01 record and it contains the employee personal data. Currently it has seven fields. The order of the fields and the data class is as follows: Record Number = 2 NUMERIC CHARACTERS, Social Security Number = 9 NUMERIC CHARACTERS, Name = 20 ALPHANUMERIC CHARACTERS; Address = 20 ALPHANUMERIC CHARACTERS; City = 16 ALPHANUMERIC CHARACTERS; State = 2 ALPHABETIC CHARACTERS; and Zip = 5 NUMERIC CHARACTERS. There are SPACES = 6 ALPHANUMERIC CHARACTERS at the end.

The PAYREC is the 02 record and it contains payroll data. Currently it has 5 fields. The order of the fields and the data class is as follows: Record Number = 2 NUMERIC CHARACTERS; Social Security Number = 9 NUMERIC CHARACTERS; Name = 20 ALPHANUMERIC CHARACTERS; Gross Pay = 12 NUMERIC CHARACTERS; and Net Pay = 12 NUMERIC CHARACTERS. There are SPACES = 25 ALPHANUMERIC CHARACTERS at the end.

The master file update is executed on daily, weekly and monthly cycles. Input can be received interactively or batched.

Technical Change/Problem Source Identification Task



On 10 May 1995, a memorandum is delivered to Debbie Smith of the computer services department of the Asbury Company. The memorandum is from the user requesting that all employee information be saved on microfiche.

Create a proposed SCR based upon what you currently know about the Asbury model payroll system and the memorandum from the user regarding the microfiche.



Technical Change/Problem Source Identification Task

BLANK SCR



Technical Change/Problem Preliminary Analysis and Categorization Task

Use the System Modification Scenario (SMS), the model system, and your proposed SCR (created in the Technical Change/Problem Source Identification Task) to perform analysis and categorization of the technical change/problem.



Technical PTR Analysis Task

Problem Trouble Report

Date: May 1, 1900 System/Subsystem: Payroll

PROBLEM: The Asbury Company's Personnel/Payroll system will not accept input data interactively.

Originator: John Jones Telephone: 542-0101



Requirement Review and Acceptance Task

Review the following SCR for FSA acceptance:

- Functionally defined SCR X0097-00
- Functionally defined SCR X0101-00
- Functionally defined SCR X0102-00
- Current technically defined SCR



Defense Finance and Accounting Service System Change Request				
1. DFAS SCR# X0097-00		2. SCR# X0097-00		3. FROM:
4. SCR Title: US SAVINGS BOND		5. Total System Changes: 1		6. System: PAYROLL & ACCOUNTING 7. Subsystem: PAYREC RECORD 8. Category: SECRET 9. Date Received: 10 MAY 1995
10. Point of Contact: DEBBIE SMITH		11. Phone: (317) 543-1234		12. Office Code: DFAS-
13. DESCRIPTION: Change the basic deductions allowed for payroll deduction. Initialize by zero filling the field. The lowest amount allowed by payroll deduction will be ten dollars (\$10.00). The amounts thereafter may be in increments of two dollars and fifty cents (\$2.50). This field will show the actual money amounts the employee has allotted. Produce one report: ① US Savings Bonds by Employee's SSN - to show all bond allotments by each employee.				
14. RECOMMENDED SOLUTION: Calculate the total bond allotment to the PAYREC record. Use the next six available spaces on the 02 record. ***The maximum allotment will not exceed the employee's basic take home pay.				
15. REQUESTER BENEFITS: To allow the employee the convenience of payroll deductions for US Savings bonds.				
16. FUNCTIONAL / TECHNICAL ANALYSIS: Use the next six available characters at the end of the PAYREC (02) record, for the total money amount to be allotted for US Savings bonds. .				
17. COST / BENEFIT ANALYSIS: By adding US Savings bonds deductions, it allows for payroll deduction for employee savings.				
18. Required by Date: 31 Jul 1995		19. Work Estimate:		20. CDA: FSO 21. DPI: FSO



Defense Finance and Accounting Service System Change Request				
1. DFAS SCR# X0101-00		2. SCR# X0101-00		3. FROM:
4. SCR Title: VACATION EARNED	5. Total System Changes: 1		6. System: PAYROLL & ACCOUNTING 7. Subsystem: PAYREC RECORD	8. Category: SECRET 9. Date Received: 10 MAY 1995
10. Point of Contact: DEBBIE SMITH		11. Phone: (317) 543-1234		12. Office Code: DFAS-
<p>13. DESCRIPTION: Add vacation time earned to the PAYREC record. Initialize by zero filling the field. Cumulate the fields, by pay periods. This field will show the actual number of days worked. Produce two reports: ① Employee Vacation Days Earned List - to show all vacations days earned for each employee and number of days on the payroll. Page break at each employee's SSN to give the employee a copy each month. The break gives the employee privacy relating to their own vacation time. ② Employee Vacation Days Taken List - to show employees' names, vacation days available, and number of days taken this calendar year to date</p>				
<p>14. RECOMMENDED SOLUTION: Calculate vacation time hours to the PAYREC record. Use the next six available spaces on the 02 record. The calculations for vacation time will be as follows:</p> <p>1 - 90 days 4 hours 121 - 270 days 12 hours 91 - 120 days 8 hours 270 - 365 days 16 hours</p> <p>Every 90 days over 365 days (1 year) the employee earns 36 hours. For example if an employee has worked 5 years and 20 days the employee would have earned 164 hours of vacation time if the employee had not used any leave.</p>				
<p>15. REQUESTER BENEFITS: To keep accurate vacation time hours available to the employee and the employee's manager .</p>				
<p>16. FUNCTIONAL / TECHNICAL ANALYSIS: Use the next six available characters at the end of the PAYREC (02) record, for the number of vacation days earned. .</p>				
<p>17. COST / BENEFIT ANALYSIS: By adding vacation time earned to the PAYREC record, it allows for better scheduling of vacation time without jeopardizing the overall mission.</p>				
18. Required by Date:		19. Work		20. CDA:
				21. DPI:



Defense Finance and Accounting Service System Change Request				
1. DFAS SCR# X0102-00		2. SCR# X0102-00		3. FROM:
4. SCR Title: VACATION EARNED	5. Total System Changes: 1		6. System: PAYROLL & ACCOUNTING 7. Subsystem: PAYREC RECORD	8. Category: SECRET 9. Date Received: 10 MAY 1995
10. Point of Contact: DEBBIE SMITH		11. Phone: (317) 543-1234		12. Office Code: DFAS-
13. DESCRIPTION: Allow each employee the capability to look at their own PAYREC data. This involves adding a password on their personal computer. This data should be made available using the Local Area Network (LAN) System. This information will be available to look at only. No changes will be allowed by the individual employee. Any errors will need to be corrected by the payroll branch personnel. Initialize by zero filling the field.				
14. RECOMMENDED SOLUTION: Using the employee's Social Security Number as the password to sign on to the LAN, the correct SSN will automatically show the employee's valid PAYREC data menu. Select the menu desired. The information then will display on the screen and be available for screen printing. Cumulate the fields, by pay periods. Add a field to the PAYREC record to show the actual number of days worked. GUI application has to be designed. The system will be available for use on the LAN and a menu designed				
15. REQUESTER BENEFITS: All employees will have available their PAYREC data to better schedule their vacation leave and adjust their work schedules accordingly.				
16. FUNCTIONAL / TECHNICAL ANALYSIS: Use the next six available characters at the end of the PAYREC (02) record, for the number of vacation days earned.				
17. COST / BENEFIT ANALYSIS: By allowing each employee to have access, it will save the office money and time. Instead of printing the reports each pay period. The employee can print or see their report at a time convenient for him/her. It may not be necessary for an employee to see his/her report every pay period.				
18. Required by Date:		19. Work		20. CDA: 21. DPI:

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Software Change Specification Preparation Task

Complete the attached Software Change Specification template for FSA-Accepted System Change Requests.



SCS template



Analysts' Review Task

Use the System Modification Scenario (SMS), the FSA-Analyzed System Change Requests (SCR) and the completed Software Change Specifications (SCS), to perform an Analyst's Review.



Detailed Impact Analysis Task

As a group, identify a list of Configuration Items (CIs) for this system.

Identify the CIs that will be impacted by the FSA-Analyzed SCRs.



Impact Analysis Review Task

Use the System Modification Scenario (SMS), the FSA-Analyzed System Change Requests (SCR) and the completed Software Change Specifications (SCS), to perform an Impact Analysis Review.



Tracking and Oversight Task

The time line for this release is 90 days. Your team has been working on the project for 60 days and the design and coding tasks have been completed. SCR X0101-00 has been amended to include sick leave calculations. What are the impacts to the release?



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